



Glacier National Park's Invasive Plant Citizen Science Program

Invasive Plant Citizen Science Program Objectives

Train citizen scientists to identify targeted invasive plants and map their locations while hiking in Glacier's backcountry.

Data collected by citizen scientists assist the park with early detection and management.

How to become an Invasive Plant Citizen Scientist

1. Complete the Invasive Plant Citizen Science Training.
2. Print the Quick Identification Card.
3. Complete Invasive Plant Citizen Science Quiz.
4. Contact us to let us know you have completed the training.
5. Hike Glacier's trails with your own GPS or borrow one from us and let us know what you see (or don't see)!

What are invasive plants and why do they matter?



Glacier National Park is part of the Crown of the Continent Ecosystem, one of the most intact ecosystems in the lower 48 states



Glacier has over

- 1,000 native plant species
- 70 mammal species
- 260 bird species



**Native plant communities are the foundation
of the ecosystem.
They stabilize the soil and provide nutrients
and habitat for wildlife and insects.**



Invasive plants threaten the Crown of the Continent Ecosystem and are one of the greatest challenges facing land managers.



B. Legler

A field invaded by St. Johnswort

Glacier National Park developed an Integrated Pest Management program in 1991. The program focuses on managing invasive plants that are considered noxious weeds.

Invasive Plant: A plant growing where it is not wanted. Even a native plant can be considered an invasive plant if it's growing out of place.

Noxious Weed: Any non-native plant that may render land unfit for agriculture, forestry, livestock, wildlife, or other beneficial uses, or that may harm native plant communities. State law mandates that any landowner has a management plan for noxious weeds.

Invasive plants decrease organic matter and soil nutrients

- Spotted Knapweed and Houndstongue outcompete native plants by having deep taproots that take up water and nutrients more efficiently.



Spotted Knapweed taproot



Houndstongue taproot

Invasive plants decrease native plant diversity

- Some invasive plants, such as Spotted Knapweed, secrete chemicals into the ground through their roots that prevent seed germination of other plant species nearby.
- Other invasive plants “choke” out native species by forming dense vegetation mats.



Spotted Knapweed

Invasive plants alter the structure of native plant communities

- In healthy native plant communities a variety of root systems hold the soil in place.
- When a single invasive plant dominates, only one type of root is present. This often leads to soil erosion, which threatens water resources.

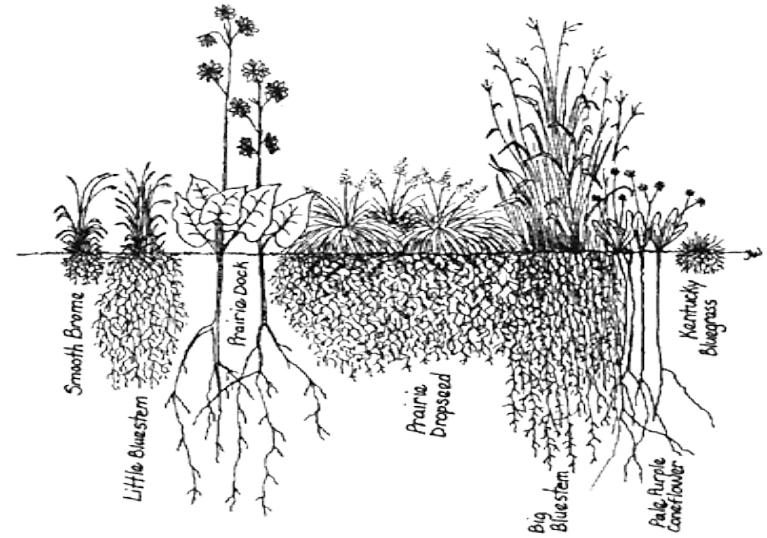


Illustration from Wild Ones

A diverse plant community

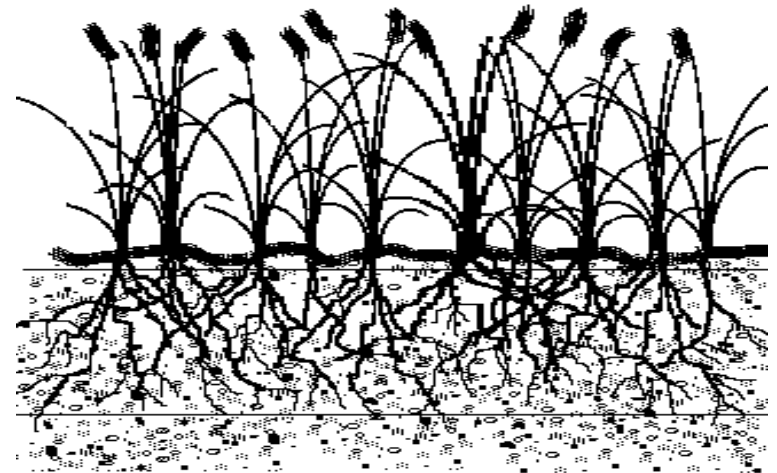


Illustration from Plants for a Future

A single plant species

Invasive plants decrease forage for livestock and wildlife

- Most noxious weeds are inedible to both wildlife and livestock and some are poisonous.
- Large infestations on private and public land where wildlife and livestock feed can severely limit the amount of forage necessary for these animals.



M. Black, U. of Wisconsin, Stevens Point

St. Johnswort is poisonous to some mammals

Invasive plants threaten the economy

- Affect recreational value.
- Increase soil erosion and sedimentation.
- Decrease economic value of land and crops.



Eurasian Water Milfoil caught in a boat propeller

Why do invasive plants compete so well?

- Continuous seed production during growing season
- Unique ways of dispersing and spreading
- Ability of seeds to remain dormant in soil
- Adaptation to a wide variety of conditions
- Compete well for soil moisture, nutrients, and sunlight



Houndstongue seeds act like Velcro and cling to clothes and fur



Oxeye Daisy seeds are viable for up to 20 years

Glacier National Park's Invasive Plant Citizen Science Program focuses on 5 invasive plant species



Spotted Knapweed, *Centaurea maculosa*



Oxeye Daisy, *Leucanthemum vulgare*



Houndstongue, *Cynoglossum officinale*



St. Johnswort, *Hypericum perforatum*



Yellow Toadflax, *Linaria vulgaris*

Why focus on these 5 species?

- The Invasive Plant Citizen Science program helps to fulfill Glacier National Park's goal to increase early detection of invasive plants in the backcountry and to help educate community members and visitors about invasive plants that are a threat to Glacier.
- Other non-native invasive species grow in the park but the five chosen species threaten many native plant communities in the park, are easy to identify, and may bloom into the fall.

Spotted Knapweed

Centaurea stoebe (formerly *C. maculosa*)



Spotted Knapweed

growth habit and flowers

- Perennial or biennial
up to 1.2 meters
(4 feet) tall
- Pinkish-purple
flowers on branch tips
- Rigid bracts below
flower heads have
brown triangular tips
with comb-like fringe



Spotted Knapweed leaves and stem

- Alternate, deeply-lobed leaves
- Stems and leaves are coarse and covered in translucent resin dots and fine hairs
- A rosette grows the first year and a flowering stem grows the second year



Spotted Knapweed roots and seeds



- Deep, stout taproot
- Roots and crown fragments can re-sprout when disturbed
- 10,000 –20,000 seeds per plant



- Seeds may remain viable in the soil for 15 or more years



Spotted Knapweed habitat



Found in disturbed sites such as fields, roadsides, and other open, sunny areas

Native plant look-alikes

- Blanketflower, *Gaillardia aristata*, rosettes are similar to Spotted Knapweed rosettes but flowers are easy to distinguish



Rosettes of *Gaillardia aristata*



Gaillardia aristata flowers



Symphyotrichum ascendens

- Western Aster, *Symphyotrichum ascendens*, flowers resemble Spotted Knapweed, but are more daisy-like

Oxeye Daisy

(Leucanthemum vulgare)



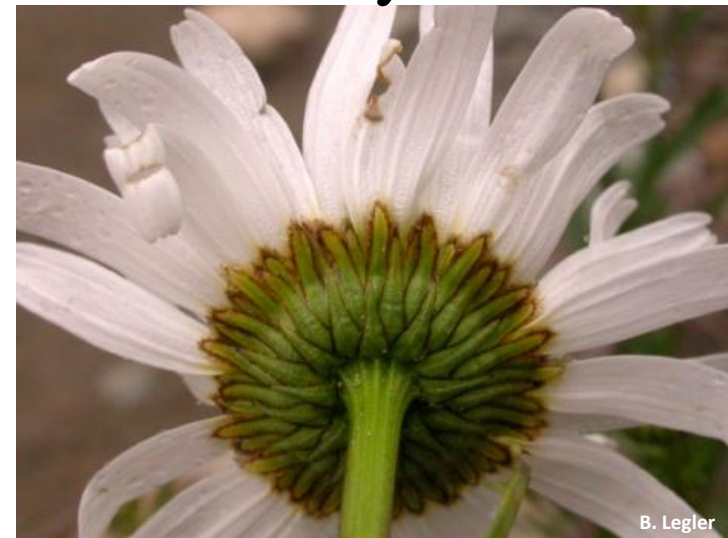
Oxeye Daisy

growth habit and flowers



- Perennial up to 1 meter (3 feet) tall, often in dense clumps
- Daisy-like flower heads on the end of each stem branch with a center of yellow disk flowers surrounded by notched, petal-like white ray flowers

- Green floral bracts with brown margins in several overlapping rows



Oxeye Daisy leaves and stem

- A rosette grows the first year and a flowering stem grows the second year



J. M. DiTomaso, UC Davis

Rosette



B. Legler

Stem and leaves

- Spoon-shaped rosette leaves grow on long, narrow stalks
- Stem leaves are alternate, toothed and lack stalks

Oxeye Daisy roots and seeds

- Rhizomes (underground creeping roots) help the plant form dense and expansive populations
- Seeds are dark brown or black and are viable for 20 years



Oxeye Daisy rhizomes



Oxeye Daisy seeds



Dense clump of Oxeye Daisies

Oxeye Daisy Habitat

- Found in disturbed areas, fields, meadows, roadsides, and forest openings



S. Askew, Virginia Tech

Oxeye Daisy along the side of a trail

Native plant look-alikes

- Native Asters and Fleabanes often resemble Oxeye Daisy
- Tufted Fleabane, *Erigeron caespitosus*, has a similar flower, but unlike Oxeye Daisy has undivided leaf margins



A. Rosseau

Erigeron caespitosus

Houndstongue

(Cynoglossum officinale)



Houndstongue growth habit and flowers

- Biennial or perennial up to 1.2 meters (4 feet) tall



- Reddish-purple flowers with 5 petals united at the base
- Small flowers in elongated clusters at branch tips



Houndstongue leaves and stem



- Velvety-hairy stem and leaves
- Leaves are alternate, oval with pointed tips and have entire margins
- Leaves become smaller higher on the stem

- A rosette grows the first year and a flowering stem grows the second year



Houndstongue rosette

Houndstongue roots and seeds

- Large taproots have woody texture
- Velcro-like seeds act like hitchhikers and stick to fur and clothes
- Seeds are viable for 2-3 years



Houndstongue habitat



- Shade tolerant; prefers open forests, meadows, roadsides, trails, and disturbed areas

Native look-alike

- Oblongleaf bluebells, *Mertensia oblongifolia*, and other species of native bluebells are native look-alikes that have similar foliage but have more rounded bell-shaped leaves and blue flowers



Mertensia oblongifolia

St. Johnswort

(Hypericum perforatum)



St. Johnswort

growth habit and flowers

- Perennial up to 1 meter (3 feet) tall
- Five-petaled yellow flowers, 2.5 cm (1 inch) across, with black dots along the edges of the petals
- Flowers in clusters at the top of branches



St. Johnswort leaves and stem

- Stems are rust colored and branch many times near the top



N. Rees, Invasive.org

- Opposite, oval leaves, up to 2.5 cm (1 inch) long, lack stalks
- Leaves have tiny transparent dots visible when held up to the light



B. Legler

St. Johnswort roots and seed



- Whole plant turns rusty red at maturity
- Deep taproot and creeping rhizomes
- Reproduces by seeds and rhizomes
- Each plant can produce 15,000 –30,000 seeds which are viable for up to 10 years



St. Johnswort habitat

- Found in disturbed areas, roadsides, pastures, meadows, forest openings, and burned areas
- Prefers full sun and drier soils
- Can be poisonous to animals with white fur



Native look-alike



Hypericum scouleri

- A native species of St. Johnswort, *Hypericum scouleri*, is typically found at higher elevations
- It is generally smaller, 10 -19 cm (3.5- 7.5 inches) tall
- Its leaves lack transparent dots



Hypericum scouleri leaves

Yellow Toadflax

(Linaria vulgaris)



B. Legler



B. Legler



D. Visalli

Yellow Toadflax

growth habit and flower



- Perennial up to 1 meter (3 feet) tall
- Snapdragon-like flowers on short stalks in dense clusters at top of stems
- Flowers are yellow with a fuzzy orange spot on lower lip and a downward-pointing yellow spur
- Also called Butter-and-Eggs



Yellow Toadflax leaves and stem



S. Askew, Virginia Tech

- Long, linear, narrow leaves attached directly to stem
- Leaves pointed at both ends
- Stem and leaves waxy-smooth and pale green
- Leaves and stems exude milky juice when broken



Weed Science Society of America

Yellow Toadflax roots and seeds



- Reproduces by seeds and roots
- Buds on the creeping rhizomes become shoots or roots and allow the plant to form large colonies
- Seeds are brown to black, flat and viable for 8 years



Seed capsules

Yellow Toadflax habitat

- Prefers moist rich soils of roadsides, meadows, stream and river banks, forest clearings and disturbed areas
- An aggressive competitor in grasslands and burned areas



Native look-alikes

- The foliage of Western Stoneseed, *Lithospermum* *rudera*le, is similar but is hairy instead of smooth



Alberta Sustainable Resources Development

Lithospermum rudera le foliage



D. Knoke, University of Wisconsin- Stevens Point

Lithospermum rudera le flowers

Conducting invasive plant surveys in Glacier National Park



What you'll need

- Field ID guide or Invasive Plant ID pocket card (on next slide)



Why worry about invasive plant species?
Glacier National Park's native plant communities, stabilize the soil and provide nutrients and habitats to other plants, animals and insects. Invasion from non-native plants threatens the ecosystem's biodiversity. Most infestations of invasive plants in Glacier are closely correlated to disturbed areas, but backcountry trails are also threatened. We need your help to detect the spread of invasive plants.

St. Johnswort *Hypericum perforatum*

- Yellow flowers with black dots at petal edge
- Oval leaves with tiny transparent dots
- Rust colored stems
- Native alpine look alike

Yellow Toadflax *Linaria vulgaris*

- Yellow flowers with orange center
- Stems have many narrow, waxy leaves
- Pale green leaves, pointed at both ends

St. Johnswort
Yellow Toadflax
Stem
Leaf

- Survey Form
 - GPS Unit
 - Digital camera
- (optional but recommended)

Patch	Species	Length of patch (ft)	Width of patch (ft)	Distribution	# of plants	UTM easting from GPS unit	UTM northing from GPS unit	Error (ft)	Stage of growth	Photo taken (y/n)	Comments (include landmarks to locate patch, observation of animal browse on invasive plants, etc.)

GLACIER NATIONAL PARK INVASIVE PLANT CITIZEN SCIENCE SURVEY FORM
 Site Name: _____ Date: ____/____/____ Name of Observer(s): _____
 Citizen Science Hours (includes driving, hiking & survey time): _____ Time at start of day: _____ Time at end of day: _____
 Trail hiked: _____ Start Location: _____ End Location: _____ Number of Miles: _____
 GPS make and model: _____ GPS Datum: NAD 83 (select if using Citizen Science GPS unit) _____ NAD 27 _____ Other: _____

Invasive plants and codes:
 Spotted Knapweed = CENMAC Oxeye Daisy = CHRLEU Houndstongue = CYNOFF *Yellow Starthistle = CENSOL
 St. Johnswort = HYPPER Yellow Toadflax = LINVUL *Orange Hawkweed = HEIAUR *Blueweed = ECHVUL

*Additional species to report if you are able identify them
 **List other invasive plants you can identify with certainty by common or scientific name

• Patch- denotes the first location you see an invasive plant species or group of species
 • Species- use codes above to list all species in patch that you can correctly identify
 • Length and Width- Estimate the length and width of the area covered by each species in the patch.
 If the patch is too large to measure, record a beginning and ending UTM coordinate for length, then estimate the width of the infestation.
 • Distribution- choose one: scattered (across patch); clumped; continuous cover (covering all ground); isolated individual; isolated clump
 • # of plants- choose one: 1 plant; 2-10; 11-20; 21-50; 51-200; over 200
 • UTM easting, UTM northing and Error- record this from the satellite page of your GPS. This info is critical- please record whenever possible.
 • Stage of growth- choose one: rosette (first year growth of leaves only); bud; flowering; seeding
 • Please send completed survey forms and photos to Glac_Citizen_Science@nps.gov; or GNP-CCRLC, P.O. Box 128, West Glacier, MT 59936, or fax to (406)888-7903



Print out field ID card and/or field guide

Field ID Card

- Click here to open a pdf version of the [field ID card](#)
- Print double sided to get a single pocket-sized card

Field Guide Booklet

- Click here to open a pdf version of [target species from the Crown of the Continent Invasive Plant Field Guide](#)
- Click here to access a full pdf version of the [Crown of the Continent Invasive Plant Field Guide](#)



Why worry about invasive plant species?

Glacier National Park's native plant communities, stabilize the soil and provide nutrients and habitats to other plants, animals and insects. Invasion from non-native plants threatens the ecosystem's biodiversity. Most infestations of invasive plants in Glacier are closely correlated to disturbed areas, but backcountry trails are also threatened. We need your help to detect the spread of invasive plants.

St. Johnswort *Hypericum perforatum*

- Yellow flowers with black dots at petal edge
- Oval leaves with tiny transparent dots
- Rust colored stems
- Native alpine look alike



St. Johnswort

Yellow Toadflax *Linaria vulgaris*

- Yellow flowers with orange center
- Stems have many narrow, waxy leaves
- Pale green leaves, pointed at both ends



Yellow Toadflax

Stem

Houndstongue *Cynoglossum officinale*

- Red-purple flowers, 5 petals on branched tips
- Bur-like seeds stick to clothing and fur
- Stem leaves alternating and have soft hair



Houndstongue

Burs

Spotted Knapweed *Centaurea biebersteinii*

- Pinkish-purple flowers with terminal heads
- Rosette leaves deeply lobed and grayish-green
- Floral bracts with triangular, brown tips and comb-like fringe



Spotted Knapweed

Stalk

Oxeye Daisy *Leucanthemum vulgare*

- White daisy-like flowers with yellow center
- Leaves with wavy margins
- Stalked basal leaves, stem leaves clasping base



Oxeye Daisy

Leaf

Please help us by reporting location of those plants. Contact the Research Learning Center at glac_citizen_science@nps.gov or 406-888-7986

GPS training

- You can pick up a GPS unit from the Crown of the Continent Research Learning Center. To do so call 406-888-7986 or email Glac_Citizen_Science@nps.gov
- Or you can use your own GPS. Make sure to set your GPS to use the datum NAD 83.



How to set your GPS datum

- If you are using a Crown of the Continent Research Learning Center GPS unit
 - The map datum will be set to NAD 83
- If you are using your own GPS
 - First go to the main menu
 - Next get to the Setup page
 - Find the Position tab or Units page (depending on the GPS)
 - Set the Position Format to UTM/UPS
 - Finally, set the map datum to NAD 83
 - Don't hesitate to contact us if you would like help with this!
- To understand more about UTM's [click here](#)

How to use GPS units from the Crown of the Continent Research Learning Center

- To turn the GPS on, click on the lower right hand button
- Our GPS units always have extra batteries with them. If the GPS doesn't turn on, change the batteries



How to find the GPS coordinates

- Press the Menu key twice to access the main menu
- ‘Satellite’ should be highlighted
- Press the Toggle/Enter button in towards the face of the GPS to select. The Toggle also moves the cursor up, down, right and left if needed.

Toggle/Enter

Menu



Recording coordinates and GPS error

- The UTM easting is the 7 digit number (starting with 0) in the top right hand corner (e.g. 0279758)
- The UTM northing is the 7 digit number below that (e.g. 5376275)
- The GPS error is located in the upper left hand corner underneath the word “Location” (e.g. ± 12 ft)



How to fill out a survey form

- Record the name of the trail or area you are surveying, the date of your survey and the names of anyone who is involved in the survey. Please complete a separate form for each trail you survey and for each date you complete a survey.

GLACIER NATIONAL PARK INVASIVE PLANT CITIZEN SCIENCE SURVEY FORM											
Site Name: <u>Bowman Lake Trail</u> Date: <u>6/10/2012</u> Name of Observer(s): <u>Jane Doe and John Doe</u> Citizen Science Hours (includes driving, hiking & survey time): _____ Time at start of day: _____ Time at end of day: _____ Trail hiked: _____ Start Location: _____ End Location: _____ Number of Miles: _____ GPS make and model: _____ GPS Datum: NAD 83 (select if using Citizen Science GPS unit) _____ NAD 27 _____ Other: _____											
<u>Invasive plants and codes:</u> Spotted Knapweed = CENMAC Oxeye Daisy = CHRLEU Houndstongue = CYNOFF *Yellow Starthistle = CENSOL St. Johnswort = HYPPER Yellow Toadflax = LINVUL *Orange Hawkweed = HEIAUR *Blueweed = ECHVUL *Additional species to report if you are able identify them **List other invasive plants you can identify with certainty by common or scientific name											
Patch	Species	Length of patch (ft)	Width of patch (ft)	Distribution	# of plants	UTM easting from GPS unit	UTM northing from GPS unit	Error (ft)	Stage of growth	Photo taken (y/n)	Comments: (include landmarks to locate patch, observation of animal browse on invasive plants, etc.)
<ul style="list-style-type: none"> Patch- denotes the first location you see an invasive plant species or group of species Species- use codes above to list all species in patch that you can correctly identify Length and Width- Estimate the length and width of the area covered by each species in the patch. If the patch is too large to measure, record a beginning and ending UTM coordinate for length, then estimate the width of the infestation. Distribution- choose one: scattered (across patch); clumped; continuous cover (covering all ground); isolated individual; isolated clump # of plants- choose one: 1plant; 2-10; 11-20; 21- 50; 51-200; over 200 UTM easting, UTM northing and Error- record this from the satellite page of your GPS. This info is critical- please record whenever possible. Stage of growth- choose one: rosette (first year growth of leaves only); bud; flowering; seeding Please send completed survey forms and photos to Glac_Citizen_Science@nps.gov; or GNP-CCRLC, P.O. Box 128, West Glacier, MT 59936, or fax to (406)888-7903 											

Recording your survey effort

2. Fill in the time at the start and end of your day (i.e. when you left your home/lodging to drive to the trailhead and when you returned to your home/lodging). Please omit any hours that were spent in unrelated activities, such as stopping for dinner on the way etc.
3. Fill in the name of the trail hiked, your starting location and ending location.
4. Fill in your best estimate of the total number of miles you hiked.

GLACIER NATIONAL PARK INVASIVE PLANT CITIZEN SCIENCE SURVEY FORM

Site Name: Bowman Lake Trail Date: 6/10/2012 Name of Observer(s): Jane Doe and John Doe

Citizen Science Hours (includes driving, hiking & survey time): Time at start of day: 9:30 AM Time at end of day: 4:00 PM

Trail hiked: Bowman Lake Trail **Start Location:** Bowman Lake CG **End Location:** Head Bowman Lake **Number of Miles:** 7.1

GPS make and model:_____ **GPS Datum:** NAD 83 (select if using Citizen Science GPS unit) _____ NAD 27_____ **Other:**_____

Invasive plants and codes:

Spotted Knapweed = **CENMAC**

Oxeye Daisy = **CHRLEU**

Houndstongue = **CYNOFF**

*Yellow Starthistle = **CENSOL**

St. Johnswort = **HYPPER**

Yellow Toadflax = **LINVUL**

*Orange Hawkweed = **HEIAUR**

*Blueweed = **ECHVUL**

*Additional species to report if you are able identify them

**List other invasive plants you can identify with certainty by common or scientific name

[illegible]

Recording GPS information

5. Fill in the make and model of the GPS unit you are using. If you borrowed a GPS unit from the Crown of the Continent Research Learning Center you can write “Citizen Science GPS unit”.
6. Select the datum that your GPS unit is using. Refer back to the slide on “How to set your datum” if you are uncertain about this step or contact us if you would like help. This information is very important, so please don’t leave it blank.

GLACIER NATIONAL PARK INVASIVE PLANT CITIZEN SCIENCE SURVEY FORM

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 Citizen Science Hours (includes driving, hiking & survey time): Time at start of day: 9:30 AM Time at end of day: 4:00 PM
 Trail hiked: Bowman Lake Trail Start Location: Bowman Lake CG End Location: Head Bowman Lake Number of Miles: 7.1
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[illegible]

Reporting invasive plant sightings

7. When you see your first patch of invasive plants, record the species code of any species you can correctly identify (or full name, if a species other than those listed on the survey form.) You can record more than one species per patch if species are interspersed.
8. **If you don't see any invasive plants during your survey, please complete the survey form by writing "No weeds found" in this area and send it to us. Reports of trails where weeds are not found are very important!**

**Note the three additional species to watch for which are found in the booklet of target species from the Crown of the Continent Invasive Plant Field Guide*

GLACIER NATIONAL PARK INVASIVE PLANT CITIZEN SCIENCE SURVEY FORM

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Trail hiked: Bowman Lake Trail **Start Location:** Bowman Lake CG **End Location:** Head Bowman Lake **Number of Miles:** 7.1

GPS make and model: Citizen Science GPS unit – GPS Datum: NAD 83 (select if using Citizen Science GPS unit) X NAD 27 Other:

Invasive plants and codes:

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St. Johnswort = **HYP**PER

Yellow Toadflax = **LINVUL**

*Orange Hawkweed = **HEIAUR**

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*Additional species to report if you are able identify them

****List other invasive plants you can identify with certainty by common or scientific name**

[illegible]

Reporting infestation size

9. Estimate the length of area covered by each species in the patch (in feet). If the patch is too long to estimate, record a beginning UTM coordinate using your GPS unit and record an ending UTM once you have reached the end of the patch.
10. Estimate the width of the area covered by each species in the patch (in feet).
11. Describe the distribution of each species in the patch by choosing one of the following: scattered (across patch), clumped (2 or more plants growing in clumps); continuous cover (covering all ground); isolated individual; isolated clump.
12. Record the number of plants for each species in the patch by choosing one of the following: 1 plant, 2-10, 11-20, 21-50, 51-200, over 200.

GLACIER NATIONAL PARK INVASIVE PLANT CITIZEN SCIENCE SURVEY FORM

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 **List other invasive plants you can identify with certainty by common or scientific name

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1	CENMAC	5	5	scattered	21-50						
	CHRLEU	40	10	continuous cover	over 200						

Recording location information

13. Record the UTM easting from the satellite page of your GPS unit (7 digit number starting with 0). Refer back to the slides on “How to find the coordinates” and “Recording coordinates and GPS error” if you are uncertain about this step or contact us if you would like help. Check to make sure you have written all the numbers correctly so that they can be relocated and mapped.
14. Record the UTM northing from the satellite page of your GPS unit.
15. Record the GPS unit error (in \pm feet) from the satellite page of your GPS unit.

Note example of how to record UTM's for a patch that is too large to estimate length.

Invasive plants and codes:

Spotted Knapweed = **CENMAC**

Oxeye Daisy = **CHRLEU**

Houndstongue = **CYNOFF**

*Yellow Starthistle = **CENSOL**

St. Johnswort = **HYPPER**

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*Orange Hawkweed = **HEIAUR**

*Blueweed = ECHVUL

*Additional species to report if you are able identify them

****List other invasive plants you can identify with certainty by common or scientific name**

[illegible]

Recording additional information

16. Record the stage of growth for each plant in the patch by choosing one of the following: rosette (first year growth of leaves only- no stems), bud (flowers formed but not yet open), flowering, seeding (flowers are drying out and developing seeds).
17. Whenever possible, please take a photo of each species (for verification of ID) and a photo of the whole patch. Indicate whether you have taken these photos in the “Photo taken” column, and submit your photos via email to glac_citizen_science@nps.gov along with your survey form.
18. Include any comments about landmarks to locate the patch, animal interactions with the plants, or more information about distribution or growth stage etc.

Invasive plants and codes:

Spotted Knapweed = **CENMAC**

St. Johnswort = **HYPPER**

Oxeye Daisy = **CHRLEU**

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*Additional species to report if you are able identify them

****List other invasive plants you can identify with certainty by common or scientific name**

[illegible]

Can I pull invasive plants I find?

- Is it a small infestation of the targeted invasive plant(s)?**
- Are you 100% sure that you have correctly identified the plant?**

If so, you may hand pull or remove the flowering head.

Please remove all parts of plant (especially if buds, flowers or seeds are present), and carry out in a plastic bag.

Please submit a photo of the invasive plant you pulled to confirm identification, and please indicate on your survey form in the comments section, that you have hand pulled or removed flower heads in that patch.

Submitting completed survey forms and photos

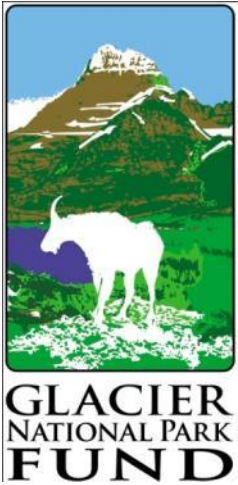
- You can email your completed survey forms and any photos as an email attachment to glac_citizen_science@nps.gov
- Or you can send them by mail to:
GNP-CCRLC Citizen Science,
P.O. Box 128,
West Glacier, MT 59936
- Or you can send them by fax to (406) 888-7903

Congratulations!

Thanks for getting involved in citizen science and stewardship in Glacier National Park!

- Click here to continue onto the [Invasive Plant Citizen Science Quiz](#)
- Please email glac_citizen_science@nps.gov to let us know you have completed this training.
- Also email or call us at (406)888-7986 if you have any questions or want to borrow a GPS unit.

Support



Thanks to the Glacier National Park Fund for providing support for this program.



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To learn more about The Crown of the Continent Research Learning Center and Citizen Science in Glacier National Park please visit our website:

<http://www.nps.gov/glac/naturescience/ccrlc-citizen-science.htm>